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Varma

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(54) **PROTOCOL FOR ALLOCATING UPSTREAM SLOTS OVER A LINK IN A POINT-TO-MULTIPOINT COMMUNICATION SYSTEM**

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(51) **Int. Cl.**
H04L 12/413 (2006.01)

(52) **U.S. Cl.** **370/447; 370/310; 370/328; 370/329; 455/403; 455/422.1; 455/450**

(58) **Field of Classification Search** **370/431, 370/441, 447; 455/130, 230, 266**
See application file for complete search history.

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(57) **ABSTRACT**

A system for controlling a contention state for a communication link between a base station controller and customer premises equipment in point-to-multipoint communication. The contention state is controlled using a state machine, which includes a grant pending absent state in which a unicast request slot is maintained open for use by the customer premises equipment. During the grant pending absent state, the customer premises equipment sends no upstream data to the base station controller but can use the unicast request slot to request a data slot for sending upstream data to the base station controller. In the grant pending state, the customer premises equipment preferably uses piggybacking to request grant of a next data slot while sending upstream data to the base station controller.

5 Claims, 2 Drawing Sheets

